

REMARKS

Claims 1-24 are pending in the application.

Claims 1-24 have been rejected.

Claims 1, 7, 10, 11, 13, 14, 16, 19, 21 and 23 have been amended as set forth herein.

Claims 1-24 remain pending in this application.

Reconsideration of the claims is respectfully requested. The Applicant makes the aforementioned amendments and subsequent arguments to place this application in condition for allowance. Alternatively, the Applicant makes these amendments and offers these arguments to properly frame the issues for appeal. In this Response, the Applicant makes no admission concerning any now moot rejection or objection, and affirmatively denies any position, statement or averment of the Examiner that was not specifically addressed herein.

I. CLAIM REJECTIONS -- 35 U.S.C. § 112

Claims 1, 7, 10, 13, 16, 19, 21 and 23 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Applicant has amended Claims 1, 7, 10, 13, 16, 19, 21 and 23 as shown above.

Accordingly, the Applicant respectfully requests that the § 112 rejection with respect to Claims 1, 7, 10, 13, 16, 19, 21 and 23 be withdrawn.

II. CLAIM REJECTIONS -- 35 U.S.C. § 103

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0052236 to Hwang et al (hereinafter "*Hwang*") in view of Applicants Admitted Prior Art in U.S. Patent Publication No. 2007/0165620 (hereinafter "*AAPA*"). The Applicant respectfully traverse the rejection.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima*

facie basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).

Independent Claim 1 recites a method for supporting downlink JD (joint detection) in a TDD CDMA communication network system. The method includes:

- judging whether CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval);
- inserting changed CAI as a specific control information into a specified field in a traffic burst in the downlink timeslot corresponding to current TTI if the CAI will change;
- sending the traffic burst containing the specific control information to each UE (user equipment) in the downlink timeslot via a downlink channel.

The Applicant respectfully submits that *Hwang* and *AAPA*, taken alone or in combination, do not teach or suggest each and every element recited in Claim 1. In particular, it is submitted that the *AAPA* does not provide a disclosure that remedies the deficiencies, conceded and otherwise, of *Hwang*. Accordingly, without conceding the propriety of the asserted combination, the asserted combination is likewise deficient.

Hwang relates to a joint detection apparatus and method. (*Hwang*, Abstract). The Office Action concedes that *Hwang* does not disclose “judging whether CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval).” However, the Office Action asserts that *Hwang* (Abstract and paragraphs [0014]-[0016]) teaches

“estimating whether the CAI (code allocation information) in a downlink timeslot will change in the next TTI (transmission time interval). (*Office Action*, page 4). The Office Action argues that *Hwang* discloses midamble codes to estimate the channel environment between the base station and user equipment, and to recognize the information of channels transferred from the base station to the user equipment. (*Office Action*, pages 4-5). However, Claim 1 does not recite “estimating.” Claim 1 recites “judging whether CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval). As stated herein above, the Office Action concedes *Hwang* does not teach “judging.” Judging is not the same as “estimating.” Further, nothing in the cited portion of *Hwang* teaches or suggests judging (or estimating as argued by the Office Action, whether CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval).” The Office Action has not provided any reasoning, with some rational underpinning, how “estimating channel the channel environment ... and recognizing information of channels” teaches or suggest that a CAI will change in a next TTI.

Furthermore, the Office Action argues that *Hwang* (paragraph [0011]) teaches “inserting changed CAI as a specific control information into a specified field in a traffic burst in the downlink timeslot corresponding to current TTI if the CAI will changed.” (*Office Action*, page 4). Here, the Office Action argues that since *Hwang* discloses “switching points”, therefore *Hwang* teaches “inserting.” However, the “switching points” do not teach or suggest “inserting changed CAI as a specific control information into a specified field in a traffic burst in the downlink timeslot corresponding to current TTI if the CAI will change.” For example, *Hwang*, paragraph [0011] states:

[0011] The NB-TDD system determines how many time slots from among the 7 time slots contained in one sub-frame can be used for the DL or UL transmission. A first time slot (TS #0) 103 must always be assigned with a DL, and a second time slot (TS #1) must always be assigned with a UL. The DwPTS 104 having 96 chips, the GP 105 having 96 chips, and UpPTS 106 having 160 chips exist between the first time slot TS#0 and the second time slot TS#1. The DwPTS is adapted to search for an

initial cell and perform synchronization and channel estimation. The UpPTS is adapted to perform channel estimation at a base station (BS), and to establish uplink synchronization with a UE (User Equipment). Two time slots of the GP are set to DL and UL time slots, and are adapted to remove signal interference caused by multi-path delay between two signals. A switching point is adapted to discriminate between the UL and DL time slots. The NB-TDD system contains two switching points in its one sub-frame. One of the two switching points is positioned between the DwPTS and the UpPTS, and the other one is variably positioned according to a time slot allocation status. (*Hwang*, paragraph [0011]) (Emphasis added).

As shown here, a switching point is used to discriminate between the UL and DL time slots. The switching point is positioned between the DwPTS and the UpPTS. The switching points do not insert changed code allocation information and do not represent the insertion of changed code allocation information. Further, the switching points do not illustrate that changed code allocation information is inserted if the code allocation information will change. The switching point does not teach or suggest “inserting changed CAI as a specific control information into a specified field in a traffic burst in the downlink timeslot corresponding to current TTI if the CAI will change.”

As stated herein above, the Office Action concedes that *Hwang* does not teach “judging whether CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval).” (*Office Action*, page 5). Nonetheless, the Office Action rejects Claim 1 contending that the *AAPA* provides this necessary disclosure. This contention is respectfully traversed.

The Office Action identifies in the background of the instant application, which the Office Action alleges as the *AAPA*, the recitation of CAI. (*Office Action*, page 5). The Office Action then concludes that the mere recitation of CAI teaches judging. The Office Action states “*AAPA* discloses occurrence of CAI in three situations, therefore judging.” (*Office Action*, page 5). The Office Action provides no reasoning, with some rational underpinning, and provides no teaching or reference to illustrate how the mere recitation of a CAI teaches “judging whether

CAI (code allocation information) in a downlink timeslot will change in a next TTI (transmission time interval).” The statements in the Office Action are conclusory. The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 1.

The Office Action rejects independent Claims 7, 10, 13, 16, 19, 21 and 23 using the same rationale as independent Claim 1. Independent Claim 16 recites, inter alia, “a judging unit configured to judge whether code allocation information (CAI) in a downlink timeslot will change in a next TTI; [and] an inserting unit configured to insert changed CAI as a specific control information into a specified field in a traffic burst in the downlink timeslot corresponding to current TTI when the CAI changes.” Therefore, Claim 16 is allowable for the same or similar reasons as Claim 1. In addition, the Office Action has not provided a teaching or directed Applicant to a reference where the various elements of Claims 7, 10, 13, 19, 21 and 23 are taught or suggested.

For example, independent Claim 7, as currently presented, recites a method for supporting downlink JD to be performed by a UE in a TDD CDMA communication network system, comprising:

- receiving a traffic burst in a downlink timeslot transferred by the network system via downlink channel;
- detecting whether the traffic burst contains code allocation information (CAI) in a next TTI in the downlink timeslot;
- extracting the CAI if the traffic burst contains the CAI;
- performing next-phase JD algorithm to decrease interference by using the CAI.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “detecting whether the traffic burst contains code allocation information (CAI) in a next TTI in the downlink timeslot.” Further, the Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “extracting the CAI if the traffic burst contains the CAI” or “performing next-phase JD algorithm to decrease interference by using the CAI.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 7.

Independent Claim 10, as currently presented, recites, a method for supporting downlink single-user JD in a TDD CDMA communication network system. The method includes:

- judging whether an ACN (active code number) in a downlink timeslot will change in a next TTI;
- inserting changed ACN as a specific control information into a specified field in a traffic burst in downlink timeslot corresponding to current TTI if the ACN will change;
- sending the traffic burst containing the specific control information to each UE in the downlink timeslot via downlink channel.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests an active code number or “judging whether an ACN (active code number) in a downlink timeslot will change in a next TTI.” Further, the Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “inserting changed ACN as a specific control information into a specified field in a traffic burst in downlink timeslot corresponding to current TTI if the ACN will change” or “sending the traffic burst containing the specific control information to each UE in the downlink timeslot via downlink channel.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 10.

Independent Claim 13, as currently presented, recites a method performed by a UE for supporting downlink single-user JD in a TDD CDMA communication network system. The method includes:

- receiving a traffic burst transferred by the network system via downlink channel in a downlink timeslot;
- detecting whether the traffic burst contains an active code number (ACN) in the next TTI in the downlink timeslot;
- extracting the ACN if the traffic burst contains the ACN;
- performing the next-phase JD algorithm to decrease interference by using the ACN.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests an active code number or “detecting whether the traffic burst contains an active code number (ACN) in the next TTI in the downlink timeslot.” Further, the Office Action has not shown where either

Hwang or the *AAPA* teaches or suggests “extracting the ACN if the traffic burst contains the ACN” or “performing the next-phase JD algorithm to decrease interference by using the ACN.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 13.

Independent Claim 19, as currently presented, recites a UE for supporting downlink JD. The UE includes:

- a receiving unit configured to receive a traffic burst transferred by a network system via a downlink channel in a downlink timeslot;
- a detecting unit configured to detect whether the traffic burst contains code allocation information (CAI) in a next TTI in the downlink timeslot;
- an extracting unit configured to extract the CAI when the traffic burst contains the CAI;
- a performing unit configured to perform next-phase JD algorithm to decrease interference by using the CAI.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “a detecting unit configured to detect whether the traffic burst contains code allocation information (CAI) in a next TTI in the downlink timeslot.” Further, the Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “an extracting unit configured to extract the CAI when the traffic burst contains the CAI” or “a performing unit configured to perform next-phase JD algorithm to decrease interference by using the CAI.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 19.

Independent Claim 21, as currently presented, recites a network system for supporting downlink single-user JD. The network system includes:

- a judging unit configured to judge whether an active code number (ACN) in a downlink timeslot will change in a next TTI;
- a specified field in a traffic burst in the downlink timeslot corresponding to current TTI when the ACN changes;
- a sending unit configured to send the traffic burst containing the specific control information to each UE in the downlink timeslot via downlink channel.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests an active code number or “a judging unit configured to judge whether an active code number (ACN) in a downlink timeslot will change in a next TTI.” Further, the Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “a specified field in a traffic burst in the downlink timeslot corresponding to current TTI when the ACN changes” or “a sending unit configured to send the traffic burst containing the specific control information to each UE in the downlink timeslot via downlink channel.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 21.

Independent Claim 23, as currently presented, recites a UE for supporting downlink single-user JD. The UE includes:

- a receiving unit configured to receive a traffic burst transferred by a network system via a downlink channel in a downlink timeslot;
- a detecting unit configured to detect whether the traffic burst contains an active code number (ACN) in the downlink timeslot in a next TTI;
- an extracting unit configured to extract the ACN when the traffic burst contains the ACN;
- a performing unit configured to perform next-phase single-user JD algorithm to decrease interference by using the ACN.

The Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests an active code number or “a detecting unit configured to detect whether the traffic burst contains an active code number (ACN) in the downlink timeslot in a next TTI.” Further, the Office Action has not shown where either *Hwang* or the *AAPA* teaches or suggests “an extracting unit configured to extract the ACN when the traffic burst contains the ACN” or “a performing unit configured to perform next-phase single-user JD algorithm to decrease interference by using the ACN.” The Office Action has not provided a *prima facie* of obviousness with respect to the aforementioned elements of Claim 19.

Accordingly, the Applicant respectfully requests that the § 103 rejections with respect to Claims 1, 7, 10, 13, 16, 19, 21 and 23, and their dependent claims, be withdrawn.

III. CONCLUSION

As a result of the foregoing, the Applicant asserts that the remaining Claims in the Application are in condition for allowance, and respectfully requests an early allowance of such Claims.


If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *rmccutcheon@munckcarter.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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